

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2005/007450

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

|                           |           |                            |           |
|---------------------------|-----------|----------------------------|-----------|
| Jitsuyo Shinan Koho       | 1922-1996 | Jitsuyo Shinan Toroku Koho | 1996-2005 |
| Kokai Jitsuyo Shinan Koho | 1971-2005 | Toroku Jitsuyo Shinan Koho | 1994-2005 |

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages                  | Relevant to claim No. |
|-----------|---|-----------------------|
| A         | JP 2004-111857 A (Dainippon Screen Mfg. Co., Ltd.),<br>08 April, 2004 (08.04.04),<br>(Family: none) | 1-24                  |
| A         | JP 2001-35824 A (Matsushita Electronics Corp.),<br>09 February, 2001 (09.02.01),<br>(Family: none)  | 1-24                  |
| A         | JP 10-172951 A (Tokyo Electron Ltd.),<br>26 June, 1998 (26.06.98),<br>& US 5997653 A                | 1-24                  |
| A         | JP 10-209143 A (Tokyo Electron Ltd.),<br>07 August, 1998 (07.08.98),<br>& US 5939139 A              | 1-24                  |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
25 July, 2005 (25.07.05)Date of mailing of the international search report  
16 August, 2005 (16.08.05)Name and mailing address of the ISA/  
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

A. 発明の属する分野の分類 (国際特許分類 (IPC))  
 Int.Cl.<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333

B. 調査を行った分野  
 調査を行った最小限資料 (国際特許分類 (IPC))  
 Int.Cl.<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333.

最小限資料以外の資料で調査を行った分野に含まれるもの

|             |            |
|-------------|------------|
| 日本国実用新案公報   | 1922-1996年 |
| 日本国公開実用新案公報 | 1971-2005年 |
| 日本国実用新案登録公報 | 1996-2005年 |
| 日本国登録実用新案公報 | 1994-2005年 |

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

C. 関連すると認められる文献

| 引用文献の<br>カテゴリー* | 引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示                             | 関連する<br>請求の範囲の番号 |
|-----------------|---|------------------|
| A               | JP 2004-111857 A (大日本スクリーン製造株式会社)<br>2004.04.08 (ファミリーなし)     | 1-24             |
| A               | JP 2001-35824 A (松下電子工業株式会社)<br>2001.02.09 (ファミリーなし)          | 1-24             |
| A               | JP 10-172951 A (東京エレクトロン株式会社)<br>1998.06.26<br>& US 5997653 A | 1-24             |

☒ C欄の続きにも文献が列挙されている。

☐ パテントファミリーに関する別紙を参照。

|  |   |
|--|---|
| * 引用文献のカテゴリー   | の日の後に公表された文献  |
| 「A」 特に関連のある文献ではなく、一般的技術水準を示すもの                                 | 「T」 国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの     |
| 「E」 国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの                         | 「X」 特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの                     |
| 「L」 優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す) | 「Y」 特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの |
| 「O」 口頭による開示、使用、展示等に言及する文献                                      | 「&」 同一パテントファミリー文献   |
| 「P」 国際出願日前で、かつ優先権の主張の基礎となる出願                                   |   |

国際調査を完了した日  
 25.07.2005

国際調査報告の発送日  
 16.08.2005

国際調査機関の名称及びあて先  
 日本国特許庁 (ISA/JP)  
 郵便番号100-8915  
 東京都千代田区霞が関三丁目4番3号

|                           |    |      |
|---------------------------|----|------|
| 特許庁審査官 (権限のある職員)          | 3K | 8509 |
| 中川 隆司                     |    |      |
| 電話番号 03-3581-1101 内線 3332 |    |      |

| C (続き) . 関連すると認められる文献 |   |                  |
|-----------------------|---|------------------|
| 引用文献の<br>カテゴリー*       | 引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示                             | 関連する<br>請求の範囲の番号 |
| A                     | JP 10-209143 A (東京エレクトロン株式会社)<br>1998.08.07<br>& US 5939139 A | 1-24             |

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

|   |  |  |
|---|--|--|
| Applicant's or agent's file reference<br><b>05PCT07</b>   | <b>FOR FURTHER ACTION</b>  | See item 4 below   |
| International application No.<br><b>PCT/JP2005/007450</b>   | International filing date ( <i>day/month/year</i> )<br><b>19 April 2005 (19.04.2005)</b> | Priority date ( <i>day/month/year</i> )<br><b>23 April 2004 (23.04.2004)</b> |
| International Patent Classification (8th edition unless older edition indicated)<br><b>See relevant information in Form PCT/ISA/237</b> |  |  |
| Applicant<br><b>TOKYO ELECTRON LIMITED</b>  |  |  |

|                                     |  |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
|-------------------------------------|--|---|-----------|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| 1.                                  | This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).  |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 2.                                  | <p>This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>   |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 3.                                  | <p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%;"><input checked="" type="checkbox"/></td> <td style="width: 35%;">Box No. I</td> <td style="width: 50%;">Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/>   | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I  | Basis of the report   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. II   | Priority  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input checked="" type="checkbox"/> | Box No. V  | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VIII   | Certain observations on the international application   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 4.                                  | The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).   |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |

|   |  |   |   |                       |
|---|--|---|---|-----------------------|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland<br><br>Facsimile No. +41 22 338 82 70 | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report<br/>25 October 2006 (25.10.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer<br/><br/><div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div></td> </tr> <tr> <td style="padding: 2px;">e-mail: pt08@wipo.int</td> </tr> </table> | Date of issuance of this report<br>25 October 2006 (25.10.2006) | Authorized officer<br><br><div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div> | e-mail: pt08@wipo.int |
| Date of issuance of this report<br>25 October 2006 (25.10.2006)   |  |   |   |                       |
| Authorized officer<br><br><div style="text-align: center; font-weight: bold; font-size: 1.2em;">Masashi Honda</div>                 |  |   |   |                       |
| e-mail: pt08@wipo.int   |  |   |   |                       |

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**05PCT07**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2005/007450**

International filing date (day/month/year)

**19.04.2005**

Priority date (day/month/year)

**23.04.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**TOKYO ELECTRON LIMITED**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/JP2005/007450

| Box No. I | Basis of this opinion  |
|-----------|--|
| 1.        | <p>With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.</p> <p><input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).</p>  |
| 2.        | <p>With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:</p> <p>a. type of material</p> <p><input type="checkbox"/> a sequence listing</p> <p><input type="checkbox"/> table(s) related to the sequence listing</p> <p>b. format of material</p> <p><input type="checkbox"/> in written format</p> <p><input type="checkbox"/> in computer readable form</p> <p>c. time of filing/furnishing</p> <p><input type="checkbox"/> contained in the international application as filed.</p> <p><input type="checkbox"/> filed together with the international application in computer readable form.</p> <p><input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.</p> |
| 3.        | <p><input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.</p>   |
| 4.        | <p>Additional comments:</p>  |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/007450

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement

1. Statement

|                               |        |      |     |
|-------------------------------|--------|------|-----|
| Novelty (N)                   | Claims | 1-24 | YES |
|                               | Claims |      | NO  |
| Inventive step (IS)           | Claims | 1-24 | YES |
|                               | Claims |      | NO  |
| Industrial applicability (IA) | Claims | 1-24 | YES |
|                               | Claims |      | NO  |

2. Citations and explanations:

Document 1: JP 2004-11857 A (DAINIPPON SCREEN MFG CO., LTD.) 8 April, 2004 (08.04.04)  
Document 2: JP 2001-35824 A (Matsushita Electric Industrial Co., Ltd.) 9 February, 2001 (09.02.01)  
Document 3: JP 10-172951 A (TOKYO ELECTRON LIMITED) 26 June, 1998 (26.06.98)  
Document 4: JP 10-209143 A (TOKYO ELECTRON LIMITED) 7 August, 1998 (07.08.98)

Claims 1-24

None of the documents 1-4 cited in the ISR describe the subject matters of claims 1-24 and it appears to be non-obvious to a person skilled in the art.

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

|   |  |  |
|---|--|--|
| Applicant's or agent's file reference<br><b>05PCT07</b>   | <b>FOR FURTHER ACTION</b>  | See item 4 below   |
| International application No.<br><b>PCT/JP2005/007450</b>   | International filing date ( <i>day/month/year</i> )<br><b>19 April 2005 (19.04.2005)</b> | Priority date ( <i>day/month/year</i> )<br><b>23 April 2004 (23.04.2004)</b> |
| International Patent Classification (8th edition unless older edition indicated)<br><b>See relevant information in Form PCT/ISA/237</b> |  |  |
| Applicant<br><b>TOKYO ELECTRON LIMITED</b>  |  |  |

|                                     |  |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
|-------------------------------------|--|---|-----------|---------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|---|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| 1.                                  | This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).  |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 2.                                  | <p>This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>   |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 3.                                  | <p>This report contains indications relating to the following items:</p> <table style="width: 100%; border: none;"> <tr> <td style="width: 10%; text-align: center;"><input checked="" type="checkbox"/></td> <td style="width: 30%;">Box No. I</td> <td style="width: 60%;">Basis of the report</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td style="text-align: center;"><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td style="text-align: center;"><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/>   | Box No. I | Basis of the report | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I  | Basis of the report   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. II   | Priority  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input checked="" type="checkbox"/> | Box No. V  | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VIII   | Certain observations on the international application   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |
| 4.                                  | The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).   |   |           |                     |                          |            |          |                          |             |  |                          |            |                            |                                     |           |   |                          |            |                         |                          |             |  |                          |              |   |

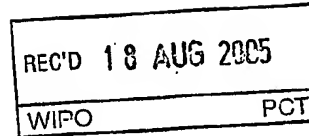
|  |  |   |   |
|--|--|---|---|
| <p>The International Bureau of WIPO<br/>34, chemin des Colombettes<br/>1211 Geneva 20, Switzerland</p> <p>Facsimile No. +41 22 338 82 70</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Date of issuance of this report<br/>25 October 2006 (25.10.2006)</td> </tr> <tr> <td style="padding: 2px;">Authorized officer<br/><br/><b>Masashi Honda</b><br/><br/>e-mail: pt08@wipo.int</td> </tr> </table> | Date of issuance of this report<br>25 October 2006 (25.10.2006) | Authorized officer<br><br><b>Masashi Honda</b><br><br>e-mail: pt08@wipo.int |
| Date of issuance of this report<br>25 October 2006 (25.10.2006)  |  |   |   |
| Authorized officer<br><br><b>Masashi Honda</b><br><br>e-mail: pt08@wipo.int  |  |   |   |



# 特許協力条約

発行人 日本国特許庁（国際調査機関）

|   |   |
|---|---|
| 代理人<br>高山 宏志<br><br>あて名<br>〒222-0033<br>日本国神奈川県横浜市港北区新横浜3丁目18番9号<br>新横浜ICビル6階 | 様 |
|---|---|



PCT  
国際調査機関の見解書  
(法施行規則第40条の2)  
[PCT規則43の2.1]

発送日  
(日.月.年) 16.08.2005

出願人又は代理人  
の書類記号 05PCT07

今後の手続きについては、下記2を参照すること。

国際出願番号  
PCT/JP2005/007450

国際出願日  
(日.月.年) 19.04.2005

優先日  
(日.月.年) 23.04.2004

国際特許分類 (IPC) IntCl<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333

出願人 (氏名又は名称)  
東京エレクトロン株式会社

1. この見解書は次の内容を含む。

- ☒ 第I欄 見解の基礎
- ☐ 第II欄 優先権
- ☐ 第III欄 新規性、進歩性又は産業上の利用可能性についての見解の不作成
- ☐ 第IV欄 発明の単一性の欠如
- ☒ 第V欄 PCT規則43の2.1(a)(i)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明
- ☐ 第VI欄 ある種の引用文献
- ☐ 第VII欄 国際出願の不備
- ☐ 第VIII欄 国際出願に対する意見

2. 今後の手続き

国際予備審査の請求がされた場合は、出願人がこの国際調査機関とは異なる国際予備審査機関を選択し、かつ、その国際予備審査機関がPCT規則66.1の2(b)の規定に基づいて国際調査機関の見解書を国際予備審査機関の見解書とみなさない旨を国際事務局に通知していた場合を除いて、この見解書は国際予備審査機関の最初の見解書とみなされる。

この見解書が上記のように国際予備審査機関の見解書とみなされる場合、様式PCT/ISA/220を送付した日から3月又は優先日から22月のうちいずれか遅く満了する期限が経過するまでに、出願人は国際予備審査機関に、適当な場合は補正書とともに、答弁書を提出することができる。

さらなる選択肢は、様式PCT/ISA/220を参照すること。

3. さらなる詳細は、様式PCT/ISA/220の備考を参照すること。

見解書を作成した日

25.07.2005

名称及びあて先

日本国特許庁 (ISA/JP)  
郵便番号100-8915  
東京都千代田区役が関三丁目4番3号

特許庁審査官 (権限のある職員)

中川 隆司

電話番号 03-3581-1101 内線 3332

3K 8509

様式PCT/ISA/237 (表紙) (2004年1月)

## 第I欄 見解の基礎

1. この見解書は、下記に示す場合を除くほか、国際出願の言語を基礎として作成された。

☐ この見解書は、\_\_\_\_\_ 語による翻訳文を基礎として作成した。  
それは国際調査のために提出されたPCT規則12.3及び23.1(b)にいう翻訳文の言語である。

2. この国際出願で開示されかつ請求の範囲に係る発明に不可欠なヌクレオチド又はアミノ酸配列に関して、以下に基づき見解書を作成した。

a. タイプ ☐ 配列表

☐ 配列表に関連するテーブル

b. フォーマット ☐ 書面

☐ コンピュータ読み取り可能な形式

c. 提出時期 ☐ 出願時の国際出願に含まれる

☐ この国際出願と共にコンピュータ読み取り可能な形式により提出された

☐ 出願後に、調査のために、この国際調査機関に提出された

3. ☐ さらに、配列表又は配列表に関連するテーブルを提出した場合に、出願後に提出した配列若しくは追加して提出した配列が出願時に提出した配列と同一である旨、又は、出願時の開示を超える事項を含まない旨の陳述書の提出があった。

4. 補足意見：

第V欄 新規性、進歩性又は産業上の利用可能性についてのPCT規則43の2.1(a)(i)に定める見解、  
それを裏付ける文献及び説明

## 1. 見解

|                |       |      |   |
|----------------|-------|------|---|
| 新規性 (N)        | 請求の範囲 | 1-24 | 有 |
|                | 請求の範囲 |      | 無 |
| 進歩性 (IS)       | 請求の範囲 | 1-24 | 有 |
|                | 請求の範囲 |      | 無 |
| 産業上の利用可能性 (IA) | 請求の範囲 | 1-24 | 有 |
|                | 請求の範囲 |      | 無 |

## 2. 文献及び説明

文献1: JP 2004-111857 A (大日本スクリーン製造株式会社)  
2004.04.08

文献2: JP 2001-35824 A (松下電子工業株式会社)  
2001.02.09

文献3: JP 10-172951 A (東京エレクトロン株式会社)  
1998.06.26

文献4: JP 10-209143 A (東京エレクトロン株式会社)  
1998.08.07

請求の範囲1-24

請求の範囲1-24に係る発明は、国際調査報告で引用された文献1-4のいずれにも記載されておらず、当業者にとって自明のものでもない。

# PATENT COOPERATION TREATY

TRANSLATION

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:

Date of mailing  
(day/month/year)

Applicant's or agent's file reference

**05PCT07**

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

**PCT/JP2005/007450**

International filing date (day/month/year)

**19.04.2005**

Priority date (day/month/year)

**23.04.2004**

International Patent Classification (IPC) or both national classification and IPC

Applicant

**TOKYO ELECTRON LIMITED**

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP

Authorized officer

Facsimile No.

Telephone No.

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/007450

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2005/007450

| Box No. V  | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |             |     |
|--|--|-------------|-----|
| <b>1. Statement</b>  |  |             |     |
| Novelty (N)  | Claims   | <u>1-24</u> | YES |
|  | Claims   |             | NO  |
| Inventive step (IS)  | Claims   | <u>1-24</u> | YES |
|  | Claims   |             | NO  |
| Industrial applicability (IA)  | Claims   | <u>1-24</u> | YES |
|  | Claims   |             | NO  |
| <b>2. Citations and explanations:</b>  |  |             |     |
| <p>Document 1: JP 2004-11857 A (DAINIPPON SCREEN MFG CO., LTD.) 8 April, 2004 (08.04.04)</p> <p>Document 2: JP 2001-35824 A (Matsushita Electric Industrial Co., Ltd.) 9 February, 2001 (09.02.01)</p> <p>Document 3: JP 10-172951 A (TOKYO ELECTRON LIMITED) 26 June, 1998 (26.06.98)</p> <p>Document 4: JP 10-209143 A (TOKYO ELECTRON LIMITED) 7 August, 1998 (07.08.98)</p> <p><u>Claims 1-24</u></p> <p>None of the documents 1-4 cited in the ISR describe the subject matters of claims 1-24 and it appears to be non-obvious to a person skilled in the art.</p> |  |             |     |

# 特許協力条約

発信人 日本国特許庁（国際調査機関）

代理人

高山 宏志

様

あて名

〒222-0033

日本国神奈川県横浜市港北区新横浜3丁目18番9号

新横浜ICビル6階

REC'D 18 AUG 2005

WIPO

PCT

PCT

国際調査機関の見解書  
(法施行規則第40条の2)  
[PCT規則43の2.1]

発送日

(日.月.年)

16.08.2005

出願人又は代理人

の書類記号 05PCT07

今後の手続きについては、下記2を参照すること。

国際出願番号

PCT/JP2005/007450

国際出願日

(日.月.年) 19.04.2005

優先日

(日.月.年) 23.04.2004

国際特許分類 (IPC) Int.Cl.<sup>7</sup> H01L21/304, B08B3/02, 5/02, G02F1/13, 1/1333

出願人 (氏名又は名称)

東京エレクトロン株式会社

1. この見解書は次の内容を含む。

- ☒ 第I欄 見解の基礎
- ☐ 第II欄 優先権
- ☐ 第III欄 新規性、進歩性又は産業上の利用可能性についての見解の不作成
- ☐ 第IV欄 発明の単一性の欠如
- ☒ 第V欄 PCT規則43の2.1(a)(i)に規定する新規性、進歩性又は産業上の利用可能性についての見解、それを裏付けるための文献及び説明
- ☐ 第VI欄 ある種の引用文献
- ☐ 第VII欄 国際出願の不備
- ☐ 第VIII欄 国際出願に対する意見

2. 今後の手続き

国際予備審査の請求がされた場合は、出願人がこの国際調査機関とは異なる国際予備審査機関を選択し、かつ、その国際予備審査機関がPCT規66.1の2(b)の規定に基づいて国際調査機関の見解書を国際予備審査機関の見解書とみなさない旨を国際事務局に通知していた場合を除いて、この見解書は国際予備審査機関の最初の見解書とみなされる。

この見解書が上記のように国際予備審査機関の見解書とみなされる場合、様式PCT/ISA/220を送付した日から3月又は優先日から22月のうちいずれか遅く満了する期限が経過するまでに、出願人は国際予備審査機関に、適当な場合は補正書とともに、答弁書を提出することができる。

さらなる選択肢は、様式PCT/ISA/220を参照すること。

3. さらなる詳細は、様式PCT/ISA/220の備考を参照すること。

見解書を作成した日

25.07.2005

名称及びあて先

日本国特許庁 (ISA/JP)

郵便番号100-8915

東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

中川 隆司

電話番号 03-3581-1101 内線 3332

3K

8509

様式PCT/ISA/237 (表紙) (2004年1月)

## 第 I 欄 見解の基礎

1. この見解書は、下記に示す場合を除くほか、国際出願の言語を基礎として作成された。

☐ この見解書は、\_\_\_\_\_ 語による翻訳文を基礎として作成した。  
それは国際調査のために提出された PCT 規則 12.3 及び 23.1(b) にいう翻訳文の言語である。

2. この国際出願で開示されかつ請求の範囲に係る発明に不可欠なヌクレオチド又はアミノ酸配列に関して、以下に基づき見解書を作成した。

a. タイプ ☐ 配列表

☐ 配列表に関連するテーブル

b. フォーマット ☐ 書面

☐ コンピュータ読み取り可能な形式

c. 提出時期 ☐ 出願時の国際出願に含まれる

☐ この国際出願と共にコンピュータ読み取り可能な形式により提出された

☐ 出願後に、調査のために、この国際調査機関に提出された

3. ☐ さらに、配列表又は配列表に関連するテーブルを提出した場合に、出願後に提出した配列若しくは追加して提出した配列が出願時に提出した配列と同一である旨、又は、出願時の開示を超える事項を含まない旨の陳述書の提出があった。

4. 補足意見：



第V欄 新規性、進歩性又は産業上の利用可能性についてのPCT規則43の2.1(a)(i)に定める見解、  
それを裏付ける文献及び説明

## 1. 見解

|                |       |             |   |
|----------------|-------|-------------|---|
| 新規性 (N)        | 請求の範囲 | <u>1-24</u> | 有 |
|                | 請求の範囲 |             | 無 |
| 進歩性 (IS)       | 請求の範囲 | <u>1-24</u> | 有 |
|                | 請求の範囲 |             | 無 |
| 産業上の利用可能性 (IA) | 請求の範囲 | <u>1-24</u> | 有 |
|                | 請求の範囲 |             | 無 |

## 2. 文献及び説明

文献1: JP 2004-111857 A (大日本スクリーン製造株式会社)  
2004.04.08

文献2: JP 2001-35824 A (松下電子工業株式会社)  
2001.02.09

文献3: JP 10-172951 A (東京エレクトロン株式会社)  
1998.06.26

文献4: JP 10-209143 A (東京エレクトロン株式会社)  
1998.08.07

請求の範囲 1-24

請求の範囲 1-24に係る発明は、国際調査報告で引用された文献 1-4 のいずれにも記載されておらず、当業者にとって自明のものでもない。

From the INTERNATIONAL BUREAU

**PCT**NOTIFICATION CONCERNING  
SUBMISSION OR TRANSMITTAL  
OF PRIORITY DOCUMENT

(PCT Administrative Instructions, Section 411)

To:

TAKAYAMA, Hiroshi  
Shin-Yokohama IC Building  
6th Floor  
18-9, Shin-Yokohama 3-chome  
Kohoku-ku, Yokohama-shi  
Kanagawa 2220033  
JAPON

|   |  |
|---|--|
| Date of mailing (day/month/year)<br>24 June 2005 (24.06.2005) |  |
| Applicant's or agent's file reference<br>05PCT07              | <b>IMPORTANT NOTIFICATION</b>  |
| International application No.<br>PCT/JP05/007450              | International filing date (day/month/year)<br>19 April 2005 (19.04.2005) |
| International publication date (day/month/year)               | Priority date (day/month/year)<br>23 April 2004 (23.04.2004)             |
| Applicant<br>TOKYO ELECTRON LIMITED et al                     |  |

- By means of this Form, which replaces any previously issued notification concerning submission or transmittal of priority documents, the applicant is hereby notified of the date of receipt by the International Bureau of the priority document(s) relating to all earlier application(s) whose priority is claimed. Unless otherwise indicated by the letters "NR", in the right-hand column or by an asterisk appearing next to a date of receipt, the priority document concerned was submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b).
- (If applicable)* The letters "NR" appearing in the right-hand column denote a priority document which, on the date of mailing of this Form, had not yet been received by the International Bureau under Rule 17.1(a) or (b). Where, under Rule 17.1(a), the priority document must be submitted by the applicant to the receiving Office or the International Bureau, but the applicant fails to submit the priority document within the applicable time limit under that Rule, the attention of the applicant is directed to Rule 17.1(c) which provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.
- (If applicable)* An asterisk (\*) appearing next to a date of receipt, in the right-hand column, denotes a priority document submitted or transmitted to the International Bureau but not in compliance with Rule 17.1(a) or (b) (the priority document was received after the time limit prescribed in Rule 17.1(a) or the request to prepare and transmit the priority document was submitted to the receiving Office after the applicable time limit under Rule 17.1(b)). Even though the priority document was not furnished in compliance with Rule 17.1(a) or (b), the International Bureau will nevertheless transmit a copy of the document to the designated Offices, for their consideration. In case such a copy is not accepted by the designated Office as the priority document, Rule 17.1(c) provides that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity, upon entry into the national phase, to furnish the priority document within a time limit which is reasonable under the circumstances.

| <u>Priority date</u>       | <u>Priority application No.</u> | <u>Country or regional Office<br/>or PCT receiving Office</u> | <u>Date of receipt<br/>of priority document</u> |
|----------------------------|---------------------------------|---|---|
| 23 April 2004 (23.04.2004) | 2004-128764                     | JP  | 20 May 2005 (20.05.2005)                        |

|   |   |
|---|---|
| The International Bureau of WIPO<br>34, chemin des Colombettes<br>1211 Geneva 20, Switzerland | Authorized officer<br><br><b>Ramen Denis</b>                    |
| Facsimile No. +41 22 740 14 35  | Facsimile No. +41 22 338 70 10<br>Telephone No. +41 22 338 7054 |